

REMARKS

The office action of July 28, 2009, has been carefully considered.

It is noted that claims 1, 5 and 20 are objected to for containing various informalities.

Claims 5-11 are rejected under 35 U.S.C. 112, second paragraph.

Claims 1-8, 11, 12 and 17-21 are rejected under 35 U.S.C. 103(a) over the patent to Suga et al. in view of the patent to Tomita et al. and the patent to Zahid.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) over Suga et al. in view Tomita et al. and Zahid, and further in view of the patent to Schram.

Claims 13-16 are rejected under 35 U.S.C. 103(a) over Suga et al. in view Tomita et al. and Zahid, and further in view of the patent to Rapp et al.

In view of the Examiner's rejections of the claims, applicant has amended claims 1, 5 and 20.

Applicant has amended claims 1, 5 and 20 to address the informalities pointed out by the Examiner. In view of these considerations it is respectfully submitted that the objection to claims 1, 5 and 20 is overcome and should be withdrawn.

It is respectfully submitted that the claims now on file particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has amended the claims to address the instances of indefiniteness pointed out by the Examiner.

In view of these considerations it is respectfully submitted that the rejection of claims 5-11 under 35 U.S.C. 112, second paragraph is overcome and should be withdrawn.

It is respectfully submitted that the claims presently on file differ essentially and in an unobvious, highly advantageous manner from the constructions disclosed in the references.

Turning now to the references and particularly to the patent

to Suga et al., this patent has been discussed at some length in previous amendments and those comments are incorporated herein by reference. The following additional comments are provided.

Suga et al. do not teach valve modules that consist of only two components, namely the valve seat and the valve body, as in the presently claimed invention. In Suga et al. the valve modules have at least three components. Furthermore, there is no teaching by Suga et al. of the seat component that forms the valve seat having a rim heightening. In Suga et al., the spring component forming the valve body is not completely free on a side facing away from the floor plate. This is seen in Fig. 7B, where the valve module has an elastic valve body 33 that is covered by the plate element 31 which has the aperture 37.

The patent to Tomita et al. discloses a reed valve for a pump. There is no teaching of a micropump with two valves that do not have any common components. In Tomita et al. the valves each share a common plate element 4 of the micropump. Each valve body 5 has two elements 5a and 5b. For constructing the valves, in addition to the element 4 and the elements 5a, 5b, a valve holder 10 is also required to secure the valve 5 to the element 4 that forms the valve seat.

The patent to Zahid discloses a pressure vessel.

The Examiner combined these references in determining that claims 1-8, 11, 12 and 17-21 would be unpatentable over such a combination. Applicant submits that the combination of references does not teach the invention recited in the amended claims now on file. There is no suggestion by Tomita et al. for constructing the valve modules of Suga et al. to be made of only two parts, where the valve seat has a rim heightening in the flow-through direction of the valve that centers the spring component and whereby the spring component has a side facing away from the floor plate that is entirely free.

The valve 5 of Tomita et al. is not entirely free on one side, but rather is partially covered by the holder 10. Figs. 2 and 4 that are referenced by the Examiner only serve to explain the valve body 5 and its position relative to the valve opening 3; these figures do not show alternative embodiments of the entire valve and thus do not include the holder 10. The holder 10 is required for all embodiments of Tomita et al. and is shown in Fig. 1, although without the reference numeral present. Also, Tomita et al. do not teach a rim heightening as in the presently claimed

invention.

Zahid does not provide any suggestion for modifying Suga et al. to have valve modules that consist of only two components, namely the valve seat and the valve body, as in the presently claimed invention. Additionally, Zahid does not deal with a valve module for a micropump and thus would provide no teaching to one of ordinary skill in the art of micropumps to construct the valve modules so that they consist of only a seat component forming the valve seat and a spring component forming the valve body, and wherein the seat component has a recess formed by a rim heightening of a floor plate, wherein the rim heightening (21) projects from the floor plate in the through-flow direction of the valve, wherein the rim heightening is integrally connected with the floor plate, and wherein the spring component placed in the recess and located adjacent the rim heightening is centered by the rim heightening, wherein the spring component is connected with an annular rim portion to the floor plate, and wherein a side of the spring component facing away from the floor plate is entirely free, as in the presently claimed invention.

In view of these considerations it is respectfully submitted that the rejection of claims 1-8, 11, 12 and 17-21 under 35 U.S.C.

103(a) over a combination of the above-discussed references is overcome and should be withdrawn.


The remaining references have also been considered. Applicant submits that they add nothing to the teachings of Suga et al. so as to teach the presently claimed invention.

In view of these considerations it is respectfully submitted that the rejection of claims 9, 10 and 13-16 under 35 U.S.C. 103(a) are overcome and should be withdrawn.

Reconsideration and allowance of the present application are respectfully requested.

Any additional fees or charges required at this time in connection with this application may be charged to Patent and Trademark Office Deposit Account No. 11-1835.

Respectfully submitted,

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Dated: January 28, 2010